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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/701,070	11/05/2003	Peter Heinrich	038724.52851US	6313

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EXAMINER	
BAREFORD, KATHERINE A	
ART UNIT	**PAPER NUMBER**
1762	

DATE MAILED: 09/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/701,070	HEINRICH ET AL.
	Examiner	Art Unit
	Katherine A. Bareford	1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-15 is/are pending in the application.

4a) Of the above claim(s) 13-15 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-12 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 11/03.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

   I. Claims 1-12, drawn to a thermal spray process, classified in class 427, subclass 447.

   II. Claims 13-15, drawn to a coated article, classified in class 428, subclass 456+.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by another and materially different process, such as laminating the layer on the substrate or applying the coating as a slurry followed by drying.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Mr. Lawrence Carter on August 4, 2004 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-12.

Affirmation of this election must be made by applicant in replying to this Office action. Claims 13-15 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Specification

6. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Only the process claims are being examined.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 4-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 4-6 require that the plastic particles comprise a particular amount by volume of the total volume of particles in the spraying jet. However, these claims depend from claim 1, which requires that the "fraction of plastic material therein increasing from the body of the cooking utensil towards a surface of the coating layer" (claim 1, last two lines). Thus, during the spraying the plastic amounts generally change to reflect the increases in plastic in the final coating layer (see claims 2 and 3, for example). Therefore, it is unclear at what point in the coating process the particle amounts of claims 4-6 are to be met. Is it during the entire process or at a particular point in the process, or does the amount refer to the amount in the final coating?

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 1-10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over DE 24 01 085 A1 (hereinafter '085) in view of Japan 02-217458 (hereinafter '458) and DE 30 42 921 A1 (hereinafter '921).

'085 teaches a method of coating cooking utensils by thermal spraying. Abstract. Plastic particles, such as PTFE, fluorocarbon or polyimide, are added with oxide particles, such as aluminum or titanium oxide, to a thermal spray jet. Abstract. The particles are sprayed to form a coating layer on the surface on the cooking utensil. Abstract. After the oxide/plastic layer is applied, a further additional plastic layer is applied. Abstract.

Claim 7: the coating layer can be formed by plasma spraying. Abstract.

Claim 10: the oxide particles can be aluminum oxide (A12O3). Abstract.

Claim 11: the plastic particles can be PTFE. Abstract.

'085 teaches all the features of these claims except (1) the position in the spray jet for adding the particles (claim 1, 8), (2) the coating layer formed in a single operation, (3) the increasing fraction of plastic material in the coating layer as the coating layer extends from the substrate surface, (4) the continuous or discontinuous increase in plastic (claims 2,3), (5) the percent of plastic (claims 4-6), (6) the angle of particle addition to the spray jet (claim 9).

'458 teaches a method of thermal spraying. Abstract. A mixture of ceramic and plastic material powders are to be applied to a surface. Abstract. The ceramic powder is added to the spray jet at a position near to the spray nozzle and the plastic powder is separately added to the spray jet at a position further from the spray nozzle and nearer to the substrate surface. Abstract and figures 1-2. The ceramic powder is added to the spraying jet at a location where the spraying jet has a higher thermal energy that then location where the plastic powder is added. Abstract and figures 1-2. As shown by figures 1-2, the plastic and ceramic particles can be added to the spraying jet at an angle of 90 degrees with the jet.

'921 teaches method of thermal spraying. Abstract. A plastic substrate is provided. Abstract. A mixture of plastic and high-melting substance, such as metallic oxides, is sprayed onto the surface of the plastic to form an intermediate coating. Abstract. The intermediate coating is applied in a graded fashion so that initially the coating is mostly plastic and as the coating extends away from the substrate towards the intermediate coating surface, it becomes mostly high-melting substance. Abstract and figure 1. The grading can occur continuously. Abstract. The grading can only occur abruptly, in layers. Abstract. Then a layer of the high-melting substance is provided. Abstract and figure 1.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify '085 to use the spray injection method of '458 in order to provide a desirable thermal spray application method for the coating, because '085 teaches to thermal spray a coating to provide a mixture of oxide and plastic, and '458 teaches a desirable thermal spray method of injecting ceramic and plastic separately into the spray jet of a thermal spray gun. As to the

amount of melting of the plastic particles, it would be a matter of routine experimentation to optimize the placement of the plastic injection into the spray, given the teaching of '458 of using different locations of injection. It would further have been obvious to modify '085 in view of '458 to use a graded coating application method as suggested by '921 in order to provide a desirable intermediate coating, because '085 teaches the desire to provide an intermediate coating between a substrate and a top layer of plastic material, where the intermediate layer is a mixture of oxides and plastic, and '921 teaches that when providing an intermediate layer between a plastic substrate and a high-melting substance (including oxides) top layer, it is desirable to grade the coating from mostly plastics at the substrate point to mostly high-melting substance at the interface between the intermediate layer and the high-melting substance layer. Although '921 teaches that the amount of high-melting substance increases as the intermediate coating extends away from the substrate, when using the coating of '085 in view of '458, it would be suggested to increase the plastic amount as the intermediate coating extends away from the substrate, because in this case the top coat is plastic, not oxide. The coating would be suggested to be applied a single operation, given the teaching of '921 to provide a continuous grading. Furthermore, the increase in materials can be either continuously or abrupt, according to the teaching of '921. As to the percent of plastic in the spray jet, since '921 teaches going from mostly the first material to mostly the second material, it would have been inherent that the different claimed percentages would occur at least once during the coating process.

12. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over '085 in view of '458 and '921 as applied to claims 1-10 and 12 above, and further in view of Metals Handbook (hereinafter MH).

'085 in view of '458 and '921 teaches all the features of these claims except spray jet gas.

However, MH teaches that conventional gases for plasma spray jets includes argon (an inert gas), hydrogen and helium. See page 363, column 1 and column 2.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify '085 in view of '458 and '921 to use the gases of MH in order to provide a desirable thermal spray application method for the coating, because '085 in view of '458 and '921 teaches to thermal spray a coating to provide a mixture of oxide and plastic, and MH teaches that when plasma spraying, a form of thermal spraying, it is desirable to use argon, hydrogen and helium gases.

Information Disclosure Statement

13. The information disclosure statement filed November 5, 1993 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

No copy of German 7324829 U was provided.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katherine A. Bareford whose telephone number is (571) 272-1413. The examiner can normally be reached on M-F(6:30-4:00) with the First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P. Beck can be reached on (571) 272-1415. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and for After Final communications.

Other inquiries can be directed to the Tech Center 1700 telephone number at (571) 272-1700.

Furthermore, information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KATHERINE BAREFORD
PRIMARY EXAMINER